EVALUATION OF MANUAL VS. AUTOMATED CLAIMS PROCESSING SYSTEMS FOR MEDICAID

1982

DIVISION OF OPERATIONS
OFFICE OF PROGRAM ADMINISTRATION
BUREAU OF PROGRAM OPERATIONS
HEALTH CARE FINANCING ADMINISTRATION

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EVALUATION OF MANUAL VS. AUTOMATED CLAIMS PROCESSING SYSTEMS

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FINAL REPORT

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I

Introduction

The purpose of this project was to identify categories of Medicaid claims where manual intervention in automated claims processing systems might enhance efficiency and cost effectiveness. As a result of a provision in Public Law 92-603 of 1972, the Federal Government encouraged States to develop automated claims processing systems by authorizing a 90 percent Federal reimbursement for the development of such systems and a 75 percent reimbursement of the cost of operating them. The basis for this encouragement was the assumption that the volume of a given category of claims is sufficiently large so that when the extensive fixed costs of systems design, programming and maintenance are added to the small variable costs of processing individual claims, the total costs would be less than those associated with a manual system.

Initial emphasis on automating claims processing systems has shifted to focus on effectiveness of performance rather than design. The General Accounting Office concluded that "States should be reimbursed for operating a system that meets certain performance standards of efficiency and effectiveness not for merely having an approved system." Twenty-nine States have automated claims processing systems certified for 75 percent Federal reimbursement of operating cost. Most of the other States are also moving in this direction. However, even in the most sophisticated of the automated systems, elements of manual review are still utilized. While the extent of manual intervention in the review process differs from State to State, it is clear that certain characteristics of particular claims lead to a choice of manual review rather than automation.

A fully automated system presumes that decisions which must be made with respect to a particular claim are straightforward and require little judgment. This study investigates the accuracy of that presumption. Certain claims such as for sterilization or abortion require specific physical material including informed consents or other certifications. These items would seem to indicate that for certain case types decisions are neither simple nor direct and might be more effectively accomplished through manual intervention.

The basic task of this study was to site visit five representative systems and to identify the categories of claims for which manual intervention occurred. In particular, the study objectives were to identify the decision criteria used by the State in choosing manual intervention rather than automation for each category of claim. Furthermore, the costs stated as fixed, semi-variable and variable were to be estimated for each claims category. Finally, in conjunction with the decision

criteria, the management practices and policies which impinge on the choice of manual versus automated review would be identified and evaluated.

These aforementioned activities represented a design which was expected to provide the Federal Government the volume and complexity parameters necessary to assist States in choosing manual or automated review for particular types of claims. Moreover, it was expected that criteria for estimating for cost effectiveness of manual intervention would be derived and made available as an aid to decision making.

II
Methodology

The study design was carried out in five steps--orientation, development of data instruments, site selection, site visits and analysis. Actual study tasks shown in Figure 1 were more extensive; however, focusing on these five primary steps clarifies the study process.

The orientation phase concentrated on understanding the literature, general systems design and pertinent laws. While the literature review focused primarily on the MMIS General Systems Design Manuals, Volumes I-IV, numerous documents relating to the status and effectiveness of the automated claims processing--MMIS effort--were reviewed. A bibliography of these documents is given in Appendix D. During this phase, interviews with HCFA staff were conducted to sharpen understanding of the claims processing system. In addition, an advisory panel was convened, representing State MMIS staff, Fiscal Agents, regional staff and various HCFA bureaus and offices.

Concomitantly, a checklist for acquiring data and criteria for site selection were developed. The checklist is given in Appendix A. It included questions pertaining to the types of manual processing, i.e., a determination of the points at which manual processing can occur and, in particular, the purpose of the review, the type of service involved, the volume of claims by type of service, the level of the review personnel, time required to review each claim and how the claim returns to the system. A second consideration of the checklist related to applicability or how it is determined that a claim will be manually reviewed. Third, the criteria for identifying a claim which should be manually reviewed were to be obtained. Finally, data were to be gathered on the entire system including total volume of claims, volume of manually reviewed claims, how the claims are adjudicated, the cost of manual and automated processing and the time required for manual and automated processing.

In order to test the usefulness of the checklist approach to collecting data, a pilot site was visited and five formal sites were selected. Criteria were developed for the selection of the pilot and study sites. These are presented in detail in Appendix B. Basically the selection criteria required a Medicaid Management Information System certified for 75 percent Federal reimbursement to assure that an automated system was in place and a distribution of States with respect to size, geographic location and number of optional services; inclusion of both State administered and Fiscal Agent claims processing systems; and inclusion of States with eligibility limited to the categorically needy as well as those where eligibility extended to both categorically and medically needy.

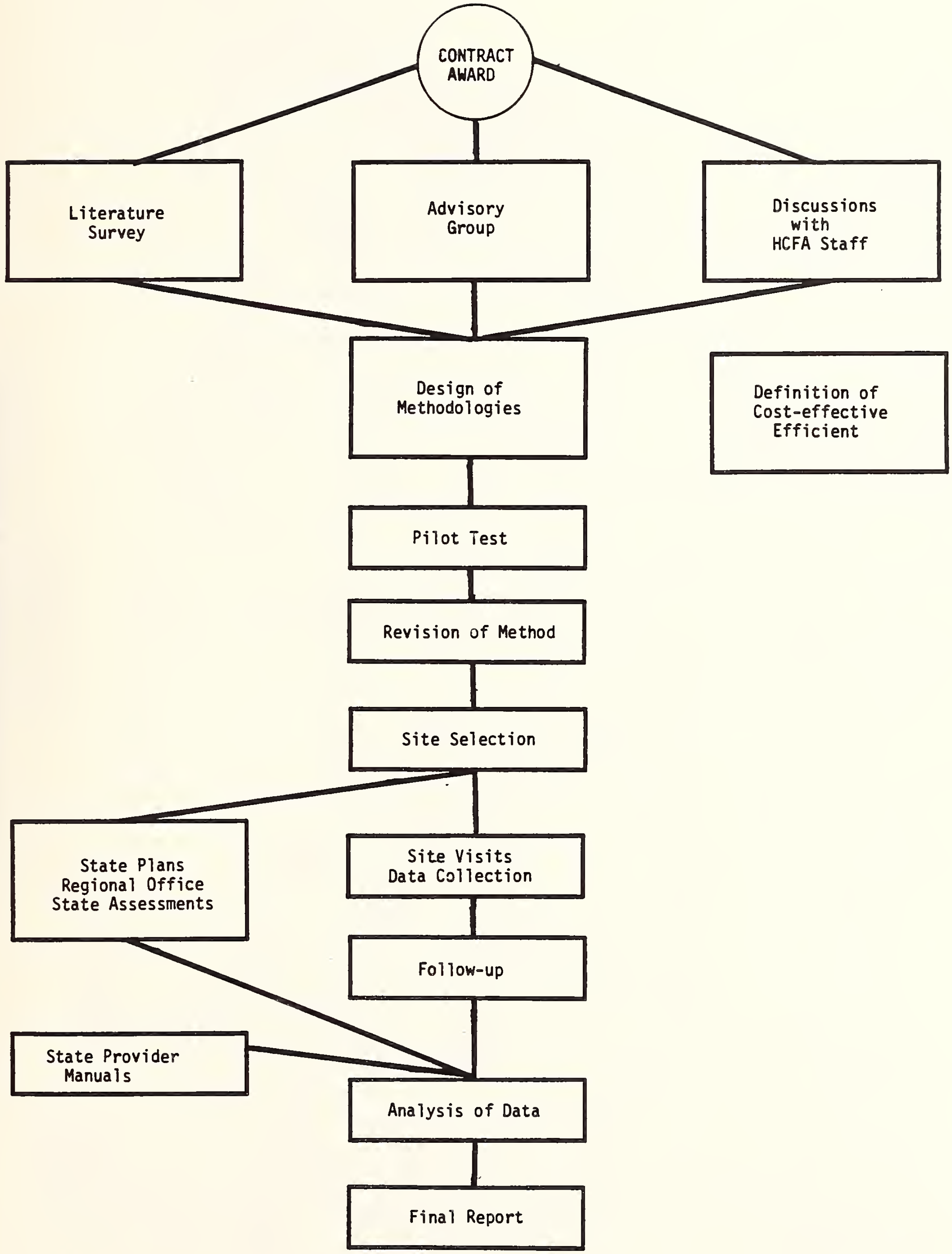


Figure 1. Chart of Study Tasks.

STANDARD REGIONAL BOUNDARIES
TEN REGIONS

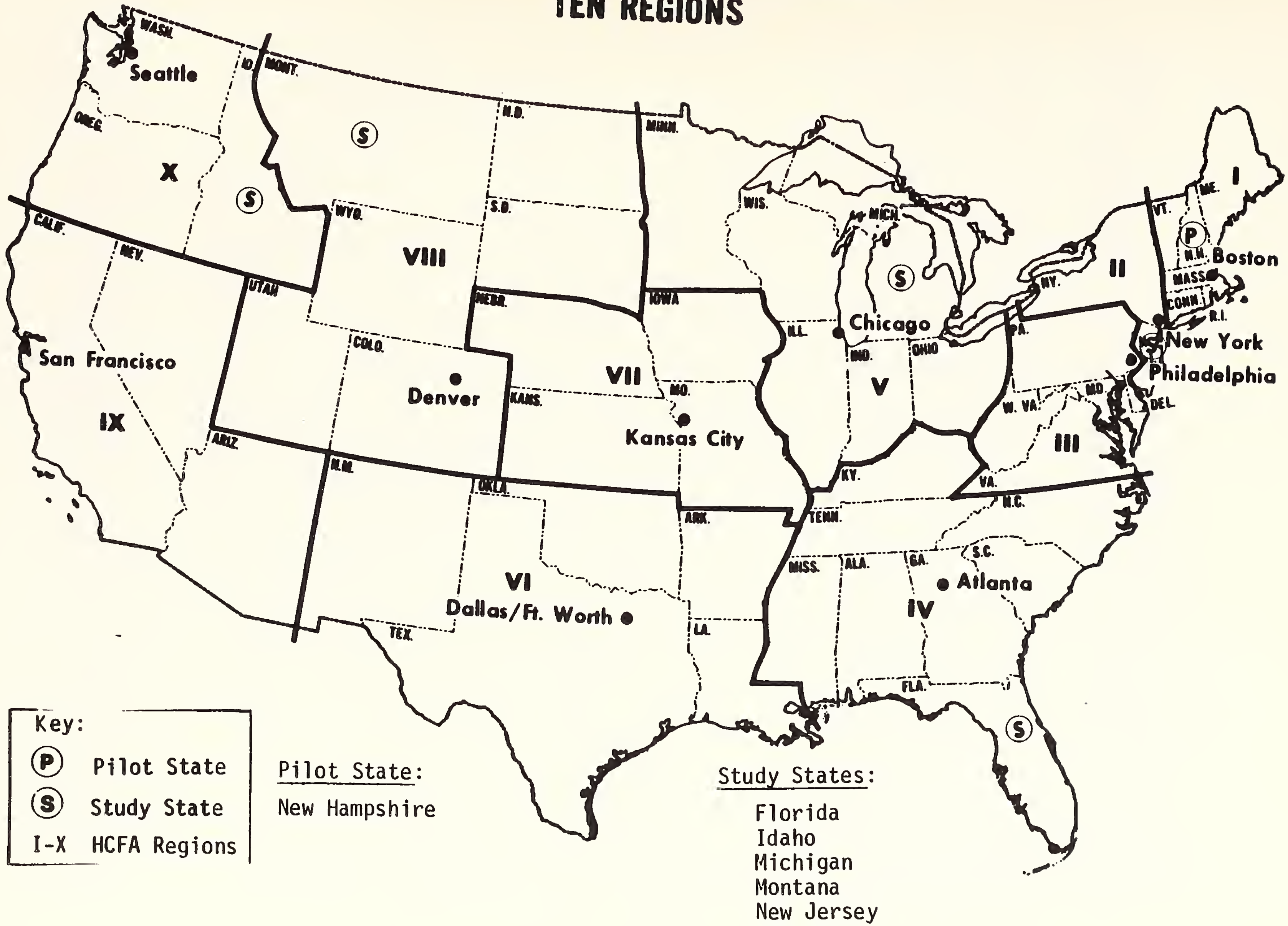


Figure 2: Geographical Location of Sites Selected for Study

Figure 2 shows a regional map of the United States with selected sites indicated. The sites were chosen not only on the stated criteria but also based upon their willingness to cooperate. A significant number of States rejected participation in the study.

Once the sites were selected, a review was made of the State Plans and the most recent Regional Office State Assessment Report. The pilot test was made in January 1980 in New Hampshire, after which the methodology was revised to focus on prepayment reviews rather than to include both prepayment and postpayment reviews, since the latter, while part of the whole system of surveillance, are not directly relevant to the study. Arrangements were then made to visit the site States: Florida, Idaho, Michigan, Montana, and New Jersey. Table I summarizes the characteristics of the States and their distribution relative to selection criteria.

TABLE I

Sites Visited During Study

State	Program	Size of Provider Payment	Number of Optional Services	Region	Type of Claims Processing
New Hampshire[1]	S	$ 43.5M	24	I	State
Florida	M	224.3M	9	IV	Private
Idaho	S	32.2M	13	X	Private
Michigan	L	792.3M	22	V	State
Montana	S	41.9M	26	VIII	Private
New Jersey	L	472.7M	27	II	Private

[1]Served as pilot for testing methodology

Two of the State Medicaid programs are located in the Welfare Department of their respective States, Michigan and Montana. The other three, the programs for New Jersey, Idaho and Florida, are located in umbrella agencies.

Even though the pilot site visit showed the checklist to have only minimal usefulness in understanding the reasons for utilizing manual or automated claims processing under various conditions, it was used as a guideline to obtain interview data. Copies of selected provider manuals, operations manuals, and available statistical material were also gathered. Idaho was in the process of revising its Operations Manual and Montana was in the process of writing provider manuals, so that current material of this type was not available in those States.

The site visits were conducted with the objective of gathering information that could be compared and analyzed in order to determine under what conditions guidelines for determining the appropriateness of manual review could be useful. In order to focus on the type of "exception" manual review that the Scope of Work indicated was the subject of this project, it was necessary to distinguish between exception review and the kinds of manual review that are necessary to assure that the claim, as presented, is complete and accurate for claims processing purposes, e.g., that it is signed, that the data are correct, etc. This orientation will be evident as each site visit is reviewed followed by a comparative analysis of the findings.

III

Site Visits

FLORIDA (February 1980)

The Florida automated claims processing system is newly revised. Several years ago the Florida system was having difficulties with its claims processing and the time involved in processing was very long. A new contractor, System Development Corporation (SDC), was brought in and has considerably reduced processing time with still further reductions to come. Florida has a very small participation by providers due to what physicians perceive as very low payments for services based upon the reluctance of the Florida legislature to appropriate adequate funds for the program. Moreover, there is no pay differential by specialty, thereby discouraging specialists from participating. The Florida system has 450,000 recipients and 20,000 providers with $400,000,000 in annual payments.

Manual review occurs in five basic situations:

1. Claims rejected by program edits in the automated processing system.

2. Claims for which exceptions are requested.

3. Claims exceeding specified dollar limits.

4. Claims for which the medical procedure is not contained on the relative value scale.

5. Claims for recipients from out-of-State.

Prior authorization might also be considered a form of manual review; however, it differs in that it is a complementary process used to expedite automated claims processing rather than an alternative to automated processing. Clarification of automated and manual claims processing is given in Section V.

In Florida the number of claims rejected through program edits is very small. This is due in part to the fact that 57 percent of claims receive prior authorization. On the other hand, claims for which exceptions are requested are a significant number and are growing rapidly. These are cases of special fee requests usually because the description of the procedure is not an exact match for the work done as perceived by the physician and concomitantly the fee schedule is inadequate. These exception claims are approved 90 percent of the time with a claim growth from 250 per week to 450 per week during 1979.

Those claims that are selected for manual review because they exceed the dollar limit (or cap) represent a special situation in Florida. These limits exist for pharmacy, dental, eyeglasses, outpatient visits, nursing home days, etc. Current limits appear too low since 90-95 percent of the manually reviewed cases are approved for medical necessity. The last two claim types which require manual review are essentially low volume exceptions to the automated claims processing system. Although the list varies in magnitude, all States receive claims for procedures not included in the automated system. Out-of-State claims have additional payment and eligibility restrictions and also are reviewed manually.

Medical claims are processed such that 98 percent of payments are made within 30 days. Manual review adds another two weeks to the process. Ninety-two percent of claims are handled by the automated system during the first pass through, that is, they are either approved for payment or denied. The other eight percent of claims are considered pending for claims resolution, correction or manual review. Approximately two percent or 1,500 claims per week are manually reviewed. At the time of the site visit 30,000 claims were pending, 53 percent of which were recipient eligibility questions. An additional seven percent were manual review resulting from multiple surgery, pricing, abortion, sterilization, consultation, hysterectomy, etc. Medicare crossover claims present major problems due to the incompatibility of the procedure coding systems.

Florida pays SDC 72 cents per claim processed. This amounts to approximately $9.4 million per year not including certain additional fees. In particular, Florida pays SDC $250,000 per year for provider relations.

IDAHO (March 1980)

Idaho has an automated claims processing system that follows an extensive pre-review of all claims. The Fiscal Agent, Electronic Data Systems (EDS), is located approximately 100 miles away from the State program. Claims are subjected to pre-review by a three-person review group and are sent in batches by bus to the Fiscal Agent. The pre-review is intended to eliminate exceptions so that almost every claim that is sent to the Fiscal Agent is paid. Essentially the Idaho system is one in which there is a manual review for medical necessity prior to the automated claims processing. The structure of the Idaho system is only practical in a State that has a relatively small volume. The contract with the Fiscal Agent, EDS, was due to expire approximately two years after the site visit. At that time the State will consider whether or not it wishes to operate the MMIS within its own hardware and software capabilities. Idaho has 30,000 recipients, ten percent of which are long-term care patients who represent 60 percent of actual expenditures. The Medicaid population is quite mobile depending upon

the state of the lumber business at any particular time. The total annual payments were almost $47,000,000.

Manual review in Idaho is more difficult to define than in the other States visited. The prior review process is effectively a manual review since unlike similar reviews in other States, the review includes medical necessity as well as clerical errors, completeness, coding errors, etc. From this prior review, there are exceptions cited which are sent for further consideration into a "next level" manual review process. These exceptions include:

1. Prior authorization of certain services.

2. Exception requests to dollar limits.

Many of the exceptions are by provider requests and these are referred to medical consultants for manual review. There are 300-400 cases per week that are referred, mostly in the areas of pediatrics, obstetrics, and state-of-the-art (new) procedures.

Approximately 2,300 claims per day go through the prior review process with all but 50 forwarded for automated processing. Most of the 50 are sent for medical review although some are returned after a cursory review because of incompleteness. Because of the prior review process, the system shows a zero error rate in its automated claims processing. An additional manual review takes place for pharmacy related items. Idaho has a co-pay on drugs and an after-edit review is geared towards curbing claims abuse.

The time required to process claims in Idaho was only 8-1/2 to 9 days plus the time necessary for the State Government to issue the checks. Prior review adds one day to the processing time but it practically eliminates returned claims. There were less than 100 claims that were more than 30 days old.

Cost figures for the Idaho system are divided into three parts--the amount paid to EDS for automated claims processing, the cost of manual review, and the overhead cost. EDS is paid $750,000 per year or approximately $2.25 per claim processed. However, EDS charges additionally for any new programming. The costs of manual intervention are estimated based upon the personnel cost of the reviewers. These costs include reviewing for completeness, medical necessity, coding, prior authorization consent forms, duplication and error resolution. They do not include claims adjustments, microfilming key entry, file maintenance, provider training and relations or third party liability. This cost is estimated to be 19 cents per claim. The overhead costs include all other associated costs and for Idaho add another 40 cents per claim.

MONTANA (May 1980)

Montana was the second State to have an approved MMIS system. This occurred in 1974 even though Montana has the tenth smallest Medicaid program. Coverage is extremely broad with services provided for categorically needy as well as medically needy. The Fiscal Agent is Dikewood with whom the State has had some difficulties. Dikewood was fined under the terms of the contract for delays in providing deliverables. Montana is the fifth largest State in land mass and had 47,000 recipients with annual payments of $43,000,000. Over 90 percent of providers participate in the Medicaid program. Even though the federal Medicaid contribution is 64 percent of the total, Medicaid represents 11 percent of the State budget.

Montana handles manual review both within the State Medicaid office and by contracting out certain types of cases. An annual fee of $220,000 is paid to the PSRO for medical claims review. An additional $9,000 is paid for review of dental claims. The State office has a staff of 13 people who review drug claims and those not handled by the PSRO. The PSRO process takes from two to five days and involves not only review for exceptions but also for items that might be considered regional control. In particular the PSRO reviews:

1. Claims with charges not included in pricing system.

2. Incorrect coding of procedures.

3. Excessive charges.

4. Recipient abuse.

5. Claims with emergency room involvement.

6. Practice patterns of providers.

7. Restriction of access--cases such as routine emergency room visits where the PSRO believes access should be restricted.

There are also claims such as outpatient psychology services that have dollar limits, but for the most part the PSRO reviews claims for medical necessity.

The State office reviews all claims that do not relate to institutional or physician services. Prior approval is obtained through manual review for out-of-State services, for medically required travel, for home health claims and for non-medical claims such as equipment, etc. The home health program has a limit of $400 per month. Excess costs require specific approval. In 1979, there were only six such claims. The most unusual aspect of the Montana system is their manual review of drugs. One of the staff persons for the State is a pharmacist and as such manually reviews all drug claims. These drug claims represent 30-35 percent of all claims even though the dollar volume represents only a small portion of total payments.

For clean claims the automated data processing handled 95 percent of claims within 20 days. However, an additional 15-30 days are required for claims on which questions arise. On the average, 25 days processing time is required for clean claims. An extra 2-4 weeks delay occurs on claims pending additional manual review.

The total payments to Dikewood for the automated claims processing was not available; however, this figure can be estimated from the claims volume and the $1.38 per case payment to be about $660,000. Manual review adds an additional 40 cents per claim to the total cost.

MICHIGAN (March 1980)

The Michigan automated claims system represents a sophisticated, well planned approach to claims payment and claims control. With the nation's fifth largest Medicaid program, the Michigan system has taken advantage of its very large volume to effectively put together a program of prior review, automated claims processing and manual review of rejected claims. Coverage is provided for both the medically needy and the categorically needy. The benefit programs are broad as a result of the demand and expectations of the population. A large part of the population are auto workers who have rich health benefits especially in the areas of dental and vision. Michigan processes claims through a State-owned computer system and has developed much of its own software.

Within the Michigan Department of Social Services, there are a number of divisions which form the Medicaid processing capability for the State. The Medical Services Administration is responsible for the development and implementation of Medicaid policies and procedures. The Bureau of Medicaid Operations is responsible for invoice processing of Medicaid claims including a claims processing section and a professional review section which manually reviews claims rejected through edits. The Special Processing Division reviews out-of-State claims and exceptions requested. The Bureau of Health Services Review is responsible for

prior authorization including dental, hospital as well as prior authorization required as a result of their monitoring and compliance function. The Medicaid Information Division is responsible for provider training and provider relations. It appears that all of these groups are staffed with appropriate expertise including physicians, dentists, nurses, technical and clerical personnel as well as a cadre of consultants available when needed. The Michigan system has almost a million recipients and annual payments over $900,000,000.

Manual review in Michigan is, for the most part, based on rejections by the automated claims processing system. There is some prior manual review, especially for such items as equipment purchases, certain types of occupational and speech therapy, some drug and ambulance services and dental services over $200. Manual review also includes sterilization and hysterectomies but not abortions since these are 100 percent State paid. Prior review and approval is also required for those providers who have been selected by the automated system as potential abusers.

The major part of manual review is the adjudication of claims rejected by the automated claims processing system. This system is designed not only to assure appropriate payment but also to monitor the overall Medicaid program. The edits in the automated system are of four types--checks for claims violating policy, checks for inconsistent claims, checks for prior approval, and checks for cases that are part of some study or monitoring requirement. The policy edits include pricing, diagnostic procedures (medical necessity), place of service, age, and frequency. Edits for inconsistent claims check to see if diagnostic and treatment codes are consistent with diagnosis, age, sex and place of service. Edits for prior approval are to assure that requests for individual consideration, prior authority requirements, approval for payment amounts in excess of pricing policy and second opinion requirements for surgical patients are adhered to. Finally, the monitoring checks are used in two ways. The first is to select certain claim types or providers for study and the second is to select the cases of those providers who have been earmarked as potential abusers. The Michigan staff estimated cost avoidance of about $4,000,000 as a result of the prior approval--manual review--components of the MMIS.

Processing time for Michigan was 16.4 days for clean claims. Approximately 12 percent of claims are pending after automated processing. These represent a relatively small number that will require manual review and a larger number that will require clerical adjustments. Michigan costs are all internal and it is difficult to separate out the costs of manual versus total processing. Nevertheless, Michigan estimates that the cost of manual processing is six cents per claim while the total cost is 68 cents per claim. This amount, however, purchases not only claims processing but also total monitoring of the system.

NEW JERSEY (April 1980)

The Medicaid program of New Jersey is administered by the Division of Medical Assistance and Health Services through a central office with local medical assistance offices located throughout the State. Uniquely, New Jersey has two Fiscal Agents, Blue Cross and Prudential Insurance. This dual arrangement matches Medicare since each of the contracting agents is also a Medicare contractor. The division of activity between the two includes special services each performs and claims processing where the provider has the choice. Blue Cross maintains eligibility files, handles out-of-State claims and drug claims. Prudential takes care of the claims of some particular hospitals and nursing homes. The locations of Blue Cross and Prudential, some distance from the State office in Trenton, create a number of communications problems. The State provides a permanent liaison to each Fiscal Agent. New Jersey has had only a five percent increase in physician fees since 1970. Medicaid cost represents 51 percent of the welfare budget for the State. New Jersey has a large volume with 660,000 recipients and $500,000,000 in annual payments.

New Jersey operates differently than the other States by having prior approval activities split between central and local offices. Computer edits are for overutilization or abuse as well as incomplete claims, eligibility and the other clerical rejections. The prior approval at the central office is done by teams and includes manual review of durable medical equipment, transportation, physical therapy, hearing aids, and rehabilitation. Certain services with caps also require prior approval from the central office. These are psychiatric and optometric services as well as certain cosmetic surgery procedures. Prosthetic devices and orthotics are considered for prior approval on the local level. Within the State there are 16 offices--five dental only and 11 for local approval.

No data were available from New Jersey on the frequency of manual review. Cases rejected by the Fiscal Agents with questions of medical necessity were referred to medical advisors. The two Fiscal Agent system resulted in a minimum of management information with any reports that did exist being generated internally. The processing system did appear efficient, however. Only three days were required for on-line processing. This was in the form of data that were received on tape. Thirty percent of all pharmacy claims were on tape, and the State was providing incentives for converting to tape input. Claims that were submitted in hard copy and had to be coded took 5-10 days to process. Overall, the average processing time was eight days.

Cost and processing estimates were provided by the State liaisons with the Fiscal Agents. Blue Cross of New Jersey received $5.5 million and Prudential $7.5 million to act as Fiscal Agents. The estimate of total cost per claim processed is 94 cents per claim with a cost of manual review of 6.4 cents per claim.

IV

Comparisons Among The Sites Visited

As can be seen in the descriptive information on each State program, there is a great deal of variation in the characteristics and practices for each State. However, to place these differences in perspective and to understand how these differences relate to developing guidelines for choosing when to use manual review, the programs will be compared. In this comparison, additional data and specific information about the programs will be presented.

Table II shows data on each of the sites visited for date of MMIS certification, type of agency, federal Medicaid assistance percentage, eligible population, number of recipients, percentage of doctor providers who participate, annual expenditures for services and administrative cost as a percentage of total cost. All of the States selected as sites in the study have certified Medicaid Management Information Systems. Michigan and Montana were among the oldest, having been certified in 1974. Idaho was certified in 1978, after several years of controversy with a Fiscal Agent. Both Florida and New Jersey are recent certifications, occurring in 1979.

Michigan processes its claims through State-owned computer equipment and appears to have no difficulty in obtaining the necessary programmer assistance and priority. The other States in the study make use of Fiscal Agents, each one contracting with a different Agent. System Development Corporation is the present Florida Agent, having taken over after a situation developed in which delays in claims processing were threatening the operation of the Medicaid program in the State. Dikewood is the Agent for Montana, and is currently being fined on a daily basis for inability to meet the contract requirements concerning claims processing time; the Montana Medicaid office is in Helena; the Dikewood office is in Great Falls, and the processing is done in Albuquerque, New Mexico. As for Idaho, the Agent is EDS-International, located in San Francisco, California, while the Medicaid operation is in Boise, Idaho. In New Jersey, there are two Fiscal Agents, Blue Cross of New Jersey in Newark, and the Prudential Insurance Company with offices in Millville, New Jersey.

The Federal Medicaid Assistance Percentage (FMAP), which can vary from 50 percent to 83 percent, covers a span in the States studied from 50 percent in Michigan and New Jersey to 64 percent in Idaho. This percentage is based on a formula which relates the State's per capita income to the national per capita income and determines the extent to which the Federal Government will assist States in making vendor payments under their programs. Under Medicaid, the State can choose to include in its coverage only the so-called categorically needy--those

TABLE II

Comparative State Program Data[1]

	Florida	Idaho	Michigan	Montana	New Jersey
Date of MMIS Certification	1979	1978	1976	1977	1979
Organizational placement (type of agency)	umbrella	umbrella	welfare	welfare	umbrella
Federal Medicaid Assistance Percentage (FMAP)	57%	64%	50%	61%	50%
Eligible population	Categorically needy	Categorically needy	Categorically[2] plus medically needy	Categorically[3] plus medically needy	Categorically needy
Number of recipients	398,000	42,000	979,000	42,000	656,000
Percent of doctor providers who participate	37%	98%	85%	99%	75%
Annual expenditures for services	236.2M	33.6M	836.2M	42.6M	472.7M
Administrative cost as percent of total cost	4.95	5.37	7.87	7.08	4.74

[1] 1977 data from "Data on the Medicaid Program" HCFA 1979 (Revised)

[2] plus children of unemployed fathers and all financially eligible individuals under 21 years of age.

[3] unemployed fathers and new families.

persons eligible for cash assistance under Aid to Families with Dependent Children (AFDC) and Supplemental Security Income (SSI) for the aged, blind, and disabled--or may extend coverage to optional groups including the medically needy who are persons who would be eligible for cash assistance except for the level of their income. Two of the States visited, Michigan and Montana, cover the medically needy as well as the recipients of cash assistance under AFDC and SSI. In addition, Michigan and New Jersey cover children of unemployed fathers and all financially eligible individuals under 21 years of age, while Montana covers unemployed fathers and their families. The extent to which the Medicaid program serves the low income or poverty population in these States can be measured by the extent to which this population is covered by Medicaid. Twenty-seven percent of the poor are covered by Medicaid in Florida and Idaho, 28 percent in Montana, 54 percent in Michigan, and 55 percent in New Jersey.

In the two small States, Idaho and Montana, most of the providers participated in the Medicaid program. Sufficient numbers of providers also were certified in the two larger States, Michigan and New Jersey. Only in Florida did the lack of participation seem a problem. There, medical practitioners, particularly specialists and dentists, participated in small numbers and this could conceivably constitute a problem. The low fee schedule payment rates appeared to impact more severely on the supply of available providers in Florida than in the other States. In Florida, the pediatricians and dentists provided covered services primarily for the EPSDT population there, since that State offered the smallest number of total services under the program. Nonetheless, provider availability could be a problem in Florida.

Two of the States require cost-sharing for specific services. In Idaho, there is a 50 cents charge for each prescription; in Michigan, persons over 21 years of age must pay $3 for each dental service and $2 for each vision service. Florida had a similar provision regarding prescriptions, but it was thrown out by the State Court. The annual expenditures for vendor payments by the States ranged from a low of $32.2 million in Idaho to $792.3 million in Michigan, with Montana at $41.9 million, Florida at $224.3 million, and New Jersey at $472.7 million. Administrative costs of the States for operation of the Medicaid programs are generally matched at 50 percent by the Federal Government (with the exception of the 90 percent rate for development of automated claims processing and management information systems and 75 percent for the operation of such systems and certain other minor costs). Michigan and Montana had the highest ratio of administrative costs to total costs, at 7.87 percent and 7.08 percent, respectively, while Idaho came in with 5.37 percent, Florida with 4.95 percent, and New Jersey with 4.74 percent. These figures include not only administrative costs but also training. This ratio should be used with care because a prudent decision to invest a dollar in administrative costs to achieve more than a dollar in program savings drives the ratio up.

The distribution of recipient population on the basis of age impacts on exception processing in two major ways: 1) a disproportionate number of recipients under 21 years of age results in a broader range of covered services in some States where the general recipient population does not receive as broad coverage as EPSDT mandates for children; and 2) a disproportionate number of elderly results in greater utilization including some specialty services such as home health care and transportation.

A comparison of recipients in the five States with respect to the categories of eligibility and their age breakdowns reveals an interesting picture which impacts on the types of services the Medicaid population receives. Table III sets forth the relative distribution by age groups of the Medicaid population of the five States.

Relating population age to utilization of services is difficult with so few data points. The States with the most elderly are Florida and Montana. However, these States are very different in terms of the number of claims for inpatient services with Florida having the highest percentage (31.9) of all the States visited while Montana's 18.4 is close to the lowest percentage. In drug claims Florida has a much higher percentage than the other States and again Montana is among the lowest. Table IV presents a couple comparison of services used among the States. There do not appear to be any statistically supportable relationships, although Florida's more frequent use of inpatient facilities and drugs is in keeping with that State's substantial over-65 population.

TABLE III

Age of Recipients by State, 1976

	Florida	Idaho	Michigan	Montana	New Jersey
Total	398	42	979	42	656
Under 6	69 } 45.7%	6 } 52.3%	169 } 56.6%	7 } 47.6%	111 } 58.8%
6-20	113	16	385	13	275
21-64	113 } 28.4%	13 } 31.0%	315 } 32.2%	13 } 31.0%	202 } 30.8%
65 & over	203 } 25.9%	7 } 16.7%	110 } 11.2%	9 } 21.4%	68 } 10.4%

TABLE IV

Percentage Comparison by Type of Service
(In millions, 1977)

	FL	ID	MI	MT	NJ	National Average
All services	100.0	100.0	100.0	100.0	100.0	100.0
Gen. Hosp. Inpat.	31.9	16.4	27.4	18.4	24.4	28.2
Mental hospital	3.0	-	6.6	0.7	9.6	3.3
Skilled nursing	19.2	15.4	18.2	15.8	1.6	17.2
Intermediate care	17.2	42.3	17.5	35.2	30.6	22.0
Physician	11.5	11.3	13.2	12.0	10.9	9.2
Dental	1.7	2.1	2.5	3.5	4.2	2.5
Other practitioners	0.1	0.5	0.9	2.5	0.6	0.9
Outpatient hospital	4.0	3.3	4.8	2.4	7.7	5.2
Home health	0.1	0.2	0.1	0.4	0.5	1.1
Drugs	10.3	5.2	5.9	5.3	6.4	6.2
Other	6.0	3.3	2.9	3.8	3.5	4.7

Aside from the inpatient figures, the percentages on other types of service indicate relative comparability (except for the previously mentioned item on drugs). This is the situation despite differences in benefits provided, in that limits are set in some States in terms of frequency or dollar amounts while in others this is not the case. Where limits are not subject to exception, the claim in excess of the limit is rejected; in other States, a manual review is conducted to determine whether the exception is medically necessary (e.g., drugs in Florida).

While States have a good deal of leeway in deciding which services to provide (in addition to the required services and those necessary to provide EPSDT to the child population), they may also place limitations on these so-called optional services. This is relevant to the study of the

role of manual review in that, in some of the States, a large segment of the manual review is for the purpose of determining exceptions to the limits set upon certain types of services. In Florida, for example, reimbursement for doctors' visits is limited to three per month (one per month in nursing homes), outpatient hospital care to $500, x-ray and laboratory to $50 per year, prescription drugs to $22 per month for patient living in the community, 45 days inpatient per fiscal year (no exceptions), and $33 per month for a patient in a nursing home. Exceptions can be made to these limits when manual review indicates medical necessity.

Idaho has a similar reimbursement limit of $35 per month on cost of prescriptions, a 40-day limit per admission on inpatient care, limitation of podiatry to acute foot conditions (except for diabetics), chiropractic limit of 36 hours per year, rental of equipment to $200 per month, and outpatient psychiatric services to 12 hours per 12 months or 45 hours per 12 months if a combination of individual and group therapy. Michigan, on the other hand, does not set dollar or frequency limits, although it does charge a $2 co-payment for dental services and a $3 co-payment for vision services for recipients over 21 years of age. It uses prior authorization to check the medical necessity of services in excess of certain frequencies or dollar amounts. Montana and New Jersey more or less follow the Michigan pattern. Montana has a limit of 200 visits per year for physical therapy, and one in ten years for dentures, and 22 hours per year for psychotherapy, but otherwise concerns itself with establishing the necessity for the service. New Jersey limits the scope of services for which reimbursement is made to chiropractors and podiatrists, but similarly requires prior authorizations rather than setting limits for services.

The mandatory services which each Medicaid program must offer are: inpatient hospital care; outpatient hospital care and rural health clinic services; other laboratory and x-ray services; skilled nursing services and home health services for individuals 21 years of age and over; early and periodic screening, diagnosis, and treatment (EPSDT) for individuals under 21 years of age; family planning services; and physician services. States can, in addition, include a number of optional services and, with the approval of the Secretary of Health and Human Services, can cover any other medical service recognized under State law. The States in this study ranged in their coverage of optional services from nine in Florida to 13 in Idaho, 22 in Michigan, 26 in Montana, and 27 in New Jersey. Of course, it should be noted that under EPSDT a number of services such as dentistry and vision care, even if not covered for the Medicaid population at large, must be covered for the individuals under 21 years of age. Table V shows the kinds of optional services included in the State plans for each of the States. Where these services are covered, there generally are limiting conditions which call for manual review to determine medical necessity.

TABLE V

Optional Services Provided by Selected States (1979)

	Florida	Idaho	Michigan	Montana	New Jersey
Podiatrist	—	X	X	X	X
Optometrist	—	X	X [2]	X	X
Chiropracter	—	X	—	—	X
Other practitioner	X	X	X	X	X
Private duty nurse	—	—	—	X	—
Clinic services	—	—	X	X	X
Dental services	—	—	X [2]	X	X
Physical therapy	—	X	X	X	X
Occupational therapy	—	—	X	X	X
Speech therapy	—	—	X	X	X
Prescribed drugs	X [1]	X [1,2]	X	X	X
Dentures	—	—	X [2]	X	X
Prosthetic devices	—	—	X	X	X
Eye glasses	—	—	X [2]	X	X
Diagnostic services	—	X	X	X	X
Screening services	—	—	—	X	X
Preventive services	—	—	—	X	X
Rehabilitation	—	X	—	X	X
65+ TB inpatient	X	—	—	—	X
SNF	—	—	—	—	—
ICF	—	—	—	—	—
65+ mental inpatient	X	—	—	X	X
SNF	—	—	—	X	X
ICF	—	X	X	X	X
ICF	X	X	X	X	X
ICF-MR	X	X	X	X	X
Inpatient psych. under 21	X	—	X	X	X
Christian Science nurse	—	—	—	—	—
Christian Science sanitoria	—	—	—	—	—
SNF under 21	—	X	X	X	X
Emergency services	X	X	X	X	X
Personal care	—	—	—	X	—

X : provides

__ : does not provide

[1] Limited by dollars/month

[2] Co-pay

*EPSDT services are in addition to those where the regular state program does not provide them.

Table VI compares the volume of claims, the percentage that are prior authorized, the number subject to manual review, processing time data and cost data. It can be seen that the site visits encompassed a range from very small claims volumes to very large. The number of claims either prior authorized or manually reviewed bears little relationship with total volume. Processing time varied greatly, but again does not appear to relate to system size. Finally, the cost per claim processed shows higher costs for low volume systems.

Great care must be taken in evaluating these comparisons. The quality of the data is suspect even though it was all that could be obtained given the study protocol. Only the Michigan values can be considered as based on hard information. The Idaho figures were estimates and the New Jersey data were obtained in discussions with the liaisons from the state Medicaid administration. The data from Florida and Montana were inputted values based on some hard data and extrapolated to be meaningful.

Table VII presents comparative information on State payments to contractors.

TABLE VII

Cost of Claims Processing by Fiscal Agents (1979)

State	Fiscal Agent	Cost
Florida	System Development Corp.	$ 9.4M
Idaho	EDS-International	750,000
Montana	Dikewood	N/A
Michigan	None	N/A
New Jersey	Blue Cross of New Jersey Prudential	5.5M 7.5M

The contracts with the Fiscal Agents differ among States, in that what is included in the contract price differs from State to State. In Florida, for example, the State pays SDC $9.4 million for processing, which does not include provider relations (for which Florida pays the Agent another $250,000). In Idaho, the State pays EDS-International $750,000 for claims processing which includes some provider relations,

TABLE VI

Comparative Claims Processing Data (1979)

	Florida	Idaho	Michigan	New Jersey	Montana
Volume of claims processed annually[1]	4,800,000	605,000	20,800,000	12,397,100	480,000
Prior-authorized or pre-examined	32,225	605,000	260,000	not avail.	not avail
Manually reviewed	78,000	22,000	166,400	not avail.	36,000
Processing time					
Percentage processed within 30 days	92.5%	99%	95.1%	97%	73%
Average processing cycle	20 days	10 days	16.4 days	8 days	25 days
Cost per claim processed	72¢	$1.74	68¢	94¢	$1.78
Cost of manual review	[2]	19¢	6¢	6.4¢	40¢

[1]Refers to claim form, which may have from 1 to as many as 15 items on it.

[2]State in process of making major changes in the area.

but this does not include special reports such as management reports for which Idaho pays extra. New Jersey pays a total of $13 million to its two contractors.

A final factor to note is the essential dynamic nature of the Medicaid claims processing operations. Each of the States we visited demonstrated this, although in different ways. New Hampshire had submitted an Advance Planning Document to the National HCFA office relating to changes in its automated system; Montana had released a Request for Proposal for a new Fiscal Agent, claims processing system; Florida was conducting a study which proposed substantial changes in the dental and drug benefits it provides; and New Jersey was also in the process of putting out an RFP. Hence, much of the data obtained through the study may already be obsolete.

V
Claims Processing Operations At The Various Sites

Automated Claims Processing

The previous section compares various attributes of the Medicaid programs at the selected sites. However, a commonality exists among the States with respect to the fact that they all have certified MMISs. The particular characteristics of the various automated claims processing systems, the various aspects of manual review and the relationships between automated claims processing and manual review require further definition. Figure 3, a graphic presentation of Idaho's claims processing system, indicates a general scheme of the claims processing methodology. However, each State's methodology has unique characteristics beginning with the entry of claims into the system.

Entry into the claims processing systems varies depending on the extent to which there is on-line entry as against keypunching of the data. Florida is a keypunch entry system, with the job shared in-house and through contract. Idaho uses keypunch, with the Fiscal Agent doing the job. In Michigan, one-half of the claims come in on tape and the other half are keypunched at the data center. New Jersey, likewise, has some coming in on tape, with about 30 percent of the drug claims coming in this way, and the rest going through the usual manual keypunch processes. Montana uses keypunch entry, with the Fiscal Agent having the responsibility but contracting with the PSRO to do the job. Clerical manual review occurs in the initial stages of processing to assure that the claim is complete and can be processed. Claims that cannot be processed are returned in most instances to the provider or, if corrections can be made, the claims are made processable.

Numerous edits are included in the automated claims processing system to audit claims for a variety of error situations, such as duplication claims, near duplicates, diagnosis incompatible with age, sex, or health status, inconsistency of diagnosis and treatment, as well as checking for the eligibility of the recipient and provider. There are also edits that identify those cases which require manual review of an "exception" type. The number of edits in a claims processing system varies widely, and the cost of developing and installing edits also varies. It was estimated that an individual edit system could cost between $2,000 and $18,000 to develop and install. Michigan and New Jersey have edits that enable monitoring of individual providers and recipients that can be put in for specific time periods and then removed. Generally, there has been a trend toward increasing the number of edits in the system, as typified by Michigan whose system has been increased by the addition of over 300 new edits since the time of original certification. Generally,

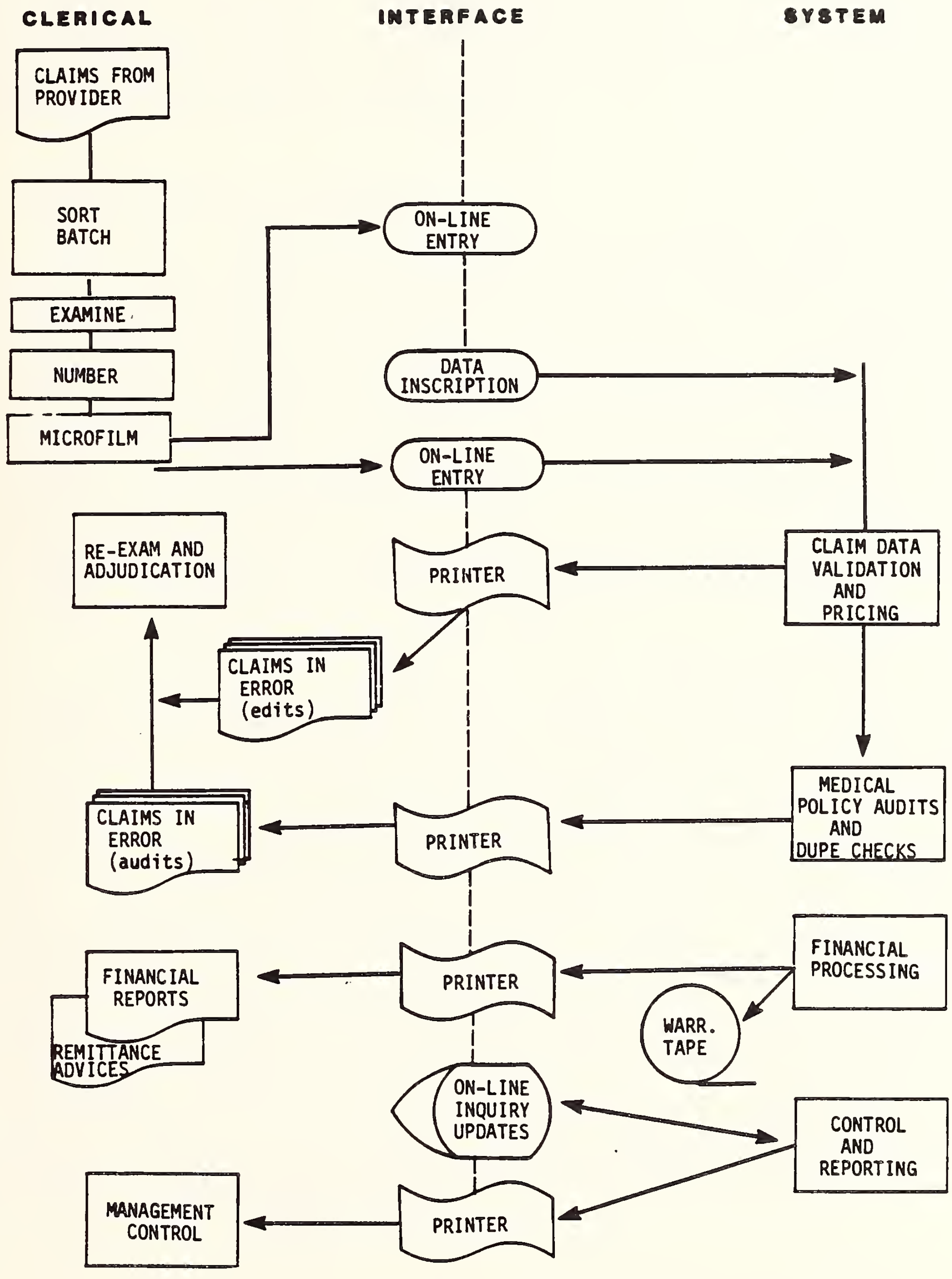


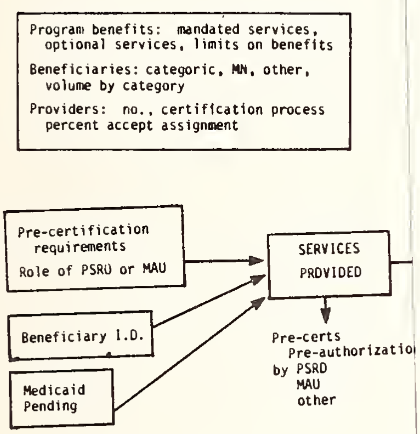
Figure 3. Example of Claims Processing Flow (Idaho).

all of the States have tended to increase edits as they discover that the automated system can decrease unnecessary paperwork when other factors, such as volume or frequency limits, make it cost-effective. Edits, basically, can make binary decisions, to include or exclude, to manually review or not to. The entire process is sketched out in Figure 4 which gives an overview of the process.

Manual or "Exception" Review

The focus of this study is the manual review or manual processing of claims that represents an alternative to automated processing action. Such manual review deals with the exception, which is not to be confused with clerical review for completion. The exception, for our purposes, is the claim that cannot be processed or that concerns a service which, because of policy determination, should be reviewed to render a judgment. When Medicaid first began, States used manual review as an alternative to automated processing, which had not yet been fully developed. As time went on, the States found that many of the determinations necessary to assure that a claim was properly paid within the framework of the Medicaid program could be automated but that some types of judgments still had to be made by human beings. The extent to which the system is automated and the extent to which the human judgments still occur is to be evaluated in this study.

Manual review of claims actually occurs at a number of points in the total Medicaid Management Information System. Prior-authorization is the first such review in point of time. This involves the identification of certain types of claims for which approval for service must be given before costs of the service which is provided can be reimbursed to the provider. It is a form of surveillance which occurs before the claim is actually generated, and is used as an alternate to manual review arising through edits in the system in some instances. For this reason, it has been included in the consideration of manual review. Medical, professional or exception review is also included in the definition; this consists of a review, by a technical or professional person, of a claim submitted by a provider for a service that has been "flagged" by an edit in the automated processing system. Samples of claims are also reviewed in the Surveillance/Utilization Review process and in Medicaid quality control. These are post-payment actions to assure system integrity and while they are part of the total review process they are not included in the definition because of their distance in time and space from the actual automated claims processing operation. They are primarily directed towards system integrity rather than focusing on individual claims.


Program benefits: mandated services, optional services, limits on benefits
Beneficiaries: categoric, MN, other, volume by category
Providers: no., certification process percent accept assignment
Pre-certification requirements
Role of PSRO or MAU
Beneficiary I.D.
Medicaid Pending
SERVICES PROVIDED
Pre-certs
Pre-authorizatio
by PSRO
MAU
other

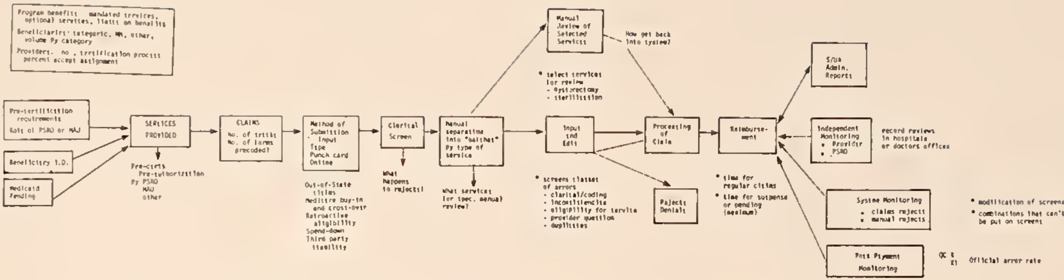


Figure 4. <u>Schematic Generic Diagram of Claims Processing</u>.

Relation of Manual Review to the Automated System

Broadly, manual review enables a claim to be processed by the automated processing machinery. Claims to be manually reviewed are determined by: 1) Federal and State policies; 2) need for information which can be furnished by that process; and 3) action by the State to monitor against possible abuses. This enables determination of medical necessity, assurance of appropriate documentation, checks for abuse, etc. The claims requiring manual review in order to be processed can be defined by: 1) type of claim, such as out-of-State claims or claims which require pricing; 2) type of provider or setting, such as independent laboratories or occupational therapists; 3) type of service, such as purchase of durable medical equipment or fitting of eyeglasses; 4) those requesting exceptions to Frequency of Service Limits, such as replacement of eyeglasses more frequently than program limits of one per year; 5) those requesting exceptions to cost limits, such as cost of prescriptions in excess of the $22 per month limit in Florida; 6) those requesting exceptions to exclusions, such as approval of certain surgery which is elective but is determined to be medically necessary; and 7) sterilizations and abortions which require legal documentation in order to be reimbursed with Federal monies. While it may be possible to program an automated check from the recorded data, it still is necessary to keep the certification on file and provide statistical data. Many of the optional services listed in Table V are the types of services which call for prior authorization or certain frequency limits to which exceptions can be made upon review.

VI
Cost Effectiveness And Efficiency

Determination of the cost effectiveness and the efficiency of introducing manual review as a complement to automated claims processing is very complex. In the organization and operation of State Medicaid programs, there are numerous factors which must be taken into consideration. State policies and laws set limits and requirements within which the programs must operate. Federal law and regulations, such as those governing sterilizations and abortions, must be adhered to if Federal financial participation is sought by the State in reimbursement to the provider. In addition, Fiscal Agents packaged systems that had been developed in one State and offered them to other States. Generally, there was a tendency to underestimate the need to make adaptations to the particular conditions in a given State.

Within this context, the cost effectiveness of a claims processing system may be considered as the reimbursement to authorized providers of medically necessary services to an eligible recipient population at appropriate rates and in a time period at the lowest possible processing cost. The complexity of this definition is indicative of the many issues which must be included in the development of criteria for assessing cost effectiveness. Appendix C gives a list of the areas that must be evaluated in the appraisal of cost effectiveness. These include legal requirements, volume, error rate, processing time, system interfaces, trends in medical practice and trends in claim growth.

Efficiency is related to cost effectiveness but is more oriented towards the monitoring and management of the claims processing system than concerned specifically with cost. Retaining records of the transactions and histories of the recipients and providers to create a good data base for management and statistical reports is an inherent part of an efficient system. These operations should be carried out at a cost that is at least comparable to the costs incurred by comparable systems for similar processing. Given improved management, manual review can be cost effective in permitting more accurate levels of reimbursement and deterring abuse or over-utilization before it occurs. In every State visited, examples were cited of more correct payment resulting from manual review. However, no State kept statistical data on this item. Efficiency of a claims processing system can be assessed by the degree to which it performs the task correctly and in a timely fashion. The impact of manual review on claims processing time is usually one to two weeks -- insufficient to prevent meeting the claims processing requirement in the regulations but, nonetheless, a delay factor to be considered.

VII
Summary

Following an orientation period in which documentation on MMIS system design was reviewed, discussions were held with Federal level staff dealing with various aspects of MMIS and Medicaid State programs, a pilot study of the New Hampshire MMIS was conducted, and information was gathered concerning the manual review of claims in five selected State programs. This information included review of State plans and studies of particular State systems. Interviews were held with State program management personnel to determine at which points in the process and for which types of claims manual reviews are introduced. In attempting to understand each State system, interviews were conducted with State Fiscal Agents or State personnel who operated the automated claims processing system. Further discussions were held with manual reviewers and manual review supervisors. Finally, at each site a small number of manual reviewed claims were observed and data were collected on the types, volume, and cost of manual review.

The narratives and data on each of the five sites visited indicate that the sites selected vary in size, geography, management of claims processing (State or Fiscal Agent), extent of eligibility for services and range of service. The data obtained are the basis for the study findings. However, it should be noted with respect to cost data that concern that such data would generally be unavailable was confirmed. With the exception of Michigan, which compiled extensive cost figures, it was not possible to get actual cost figures on prior-authorization and manual review. Costs were obtained through rough estimates in other States. Data were obtained on the number of staff involved, percentage of time they spent, salaries and overhead. The data obtained were not broken down by category of claim to avoid the potential for inaccurate comparisons among States as a function of large differences in types of claims processed. For example, it is noteworthy that drug claims are the largest in volume but the least expensive to process. In Florida, drug claims constituted 65 percent of the total while in Montana they were 30-35 percent of the total claim volume. This impacts on the average cost per claim figures of the respective States.

An important factor is the definition of what constitutes a "claim." While some claim forms can contain a single item, others may contain anywhere from three to 15 items or may contain all the items for a month's inpatient care. This impacts on the processing of a claim form where one item must be reviewed or is questioned. In Idaho, this results in a review followed by manual processing to payment. In Montana, the individual item can be taken off the form, manually processed, and returned to the automated system for payment. In Florida, the program makes use of a pharmacy label, which requires that

given recipients use one pharmacist for a month as a means of controlling utilization, with the monthly claim coming in with the label affixed to it.

Manual review, while differing at each of the sites relative to which types of services were included, had a common basis in the criteria used to establish such reviews. These criteria included:

1. Medical necessity determinations.
2. Determinations of medical appropriateness--quality of care.
3. Pricing of certain services.
4. Deterrence of abuse.
5. Deterrence of over-utilization.
6. Flexibility in an otherwise rigid system.
7. Legal requirement for cost containment.
8. Claims volume based on type of claim.

Every site reported that it made use of these criteria, except in the case of medical appropriateness. In particular, a staff member in Idaho indicated that since the State did not do peer review, it was not directly concerned with the quality of medical care which was the responsibility of the PSRO and peer review. Others, such as the Michigan staff, believed that they impacted substantially on quality of care through their prior-authorization activities.

There are two basic approaches to limiting utilization of services--either by setting frequency of service or dollar amount maximums. In the first case, use is simply limited. For example, there is a cap on the number of inpatient days per admission or outpatient visits per month. Whether built into the automated claims processing system or reserved for manual review, whenever use exceeds the limits then an additional review is required to establish whether the claim should be denied or approved as an exception. In the second situation, there are dollar limits on services, such as a maximum price for prescription drugs or a maximum monthly or annual total for outpatient psychiatric services. In such cases, dollar limits may be overturned in subsequent review if medical necessity can be demonstrated.

Each site makes its own decision as to whether to use edits in the automated claims processing system to select claims for manual review or to require prior authorization of a service. However, in no instance were there explicit written materials on the reasons for such policy decisions. There is no documentation that suggests that cost effectiveness is a determining factor in choosing manual review. Edits in the automated system can pick up duplicates or procedures which are excessive in terms of frequency, but there are more complex judgments which can identify inappropriate or unnecessary procedures through manual review or be used to more equitably reimburse providers for services which are extraordinary. Provider relations are also a key part of the Medicaid program, since without sufficient cooperation from the physicians, hospitals, and other providers, it is difficult if not impossible to provide services efficiently. In Florida, for example, only about 40 percent of the providers are participating, and in some specialty areas there is a problem with adequacy of numbers in given geographic areas. Less than eight percent of the dentists participate, largely because of low fees paid for the EPSDT population. In the other States the degree of participation of providers is higher and in particular in the smaller less populated States there is widespread acceptance of the program. The impact of manual review on provider relations is a positive one. It permits flexibility, independent consideration, and adjustments based on the particular circumstances of the individual case, and thus is a factor in improving provider relations. However, where the overall fee schedule is excessively low, manual review cannot overcome this factor in the provider relations area.

Cost effectiveness and cost containment are closely interwoven. Thus manual review involves staff, facilities for staff, etc., these costs are to some extent offset by actual or implied savings resulting from the deterrence of some claims and the denial of others. In prior authorization, a justification or a treatment plan must accompany the request or, in manual review by exception, there must be an operative report that spells out why this particular claim is unusual and requires individual consideration. The deterrent effect of such processes is estimated to be substantial, although little hard data actually exist. In Michigan the dental program has figures on cost avoidance associated with manual review and they are significant. Estimated cost avoidance for the fiscal year 1978-1979 for this aspect of the program alone was $700,000 (indirect, through deterrence); $2,000,000 in reduction occurred through prior authorization reviews; $21,000 through rejections of endontics; $65,000 through prior authorization of services for persons in long-term care. The prior authorization system as a whole saved $1,600,000.

Generally, less than two percent of total claims were prior authorized by States, and of these only about five percent were denied. Denials

tended to be greater in areas of low volume such as durable medical equipment, dentistry, and vision services. The percentage of manual "exception" reviews varied more widely from State to State. Montana reviewed manually almost eight percent of claims, while Idaho, Florida, and Michigan reviewed three percent, 1.5 percent, and one percent, respectively.

The larger percentage in Montana reflects its program design, which involves a very small State staff and a contractual relationship with the Montana State PSRO to review other provider claims in addition to the usual inpatient claims. While manual review does add to the overall claims processing time, the amount of time it adds is not substantial and is not sufficient to cause a problem in meeting Federal processing time requirements. Of the the States visited, only Montana had problems with meeting the time requirements, and the problems were more directly with the automated claims processing system than with manual review. And since manual review enabled some of the claims (those requiring pricing or special consideration) to be processed more expeditiously and to the providers wishes, as in Florida, the process has positive as well as negative impact on time factors.

Since the States studied, except for Michigan, did not have costs accounted for in a manner that would permit distinguishing between costs associated with manual vs. automated systems, such costs were estimated. Program managers in the States were requested to estimate the costs by taking into account the number of staff involved in manual processing, the amount of their time spent in this activity, their salary levels, and overhead costs. The amount of expenditure for staff and overhead was not great. It varied from a low of six cents to 6.25 cents per claim in New Jersey and Michigan, to 40 cents in Montana. In all cases these costs were in addition to, rather than substitutions for, automated claims processing costs. As for the impact of manual review on error rate, it is primarily a reducer in that it can correct situations before they become errors; however, it can result in errors if after manual review the claim is not returned to the automated system and put through all the other edits. The pre-exam in Idaho has reduced errors to such an extent that Idaho at last reading had a zero error rate.

VIII

Decision Guidelines For The Use Of Manual Review

The underlying hypothesis in conducting this study is that manual review is an alternative to automated claims processing. This implies that for each type of service it is possible to develop criteria for choosing whether manual or automated claims processing is appropriate. The site visits and the data gathered and summarized indicate that the choice of manual or automated processing is not as simplistic as might be assumed given the hypothesis. Such a choice is a function of Medicaid volume, cost, services covered, Fiscal Agent capability, personnel and coverage policies. Nevertheless, it is possible to make some general statements about the choice of manual versus automated claims processing and to provide definitions and guidelines for considering the choice.

The use of the term "manual review" refers to the personal examination of exceptions to Medicaid reimbursement policy. Such a review is based upon the particular claim being a certain type of claim or violating specific restrictions that have been imposed by the individual State Medicaid Plan. Manual review in this context does not include the clerical scanning of a claim to assure that it is complete and processable from the point of view of data adequacy. This is done in all systems except for tape entry of claims to minimize claims handling for missing data once the claim is in the automated claims processing cycle. Tape entry claims are permitted only from providers with a proven record of clerical completeness.

Manual review is, therefore, confined to the assessment of a proposed or actual service to assure that it is appropriate for the agency to pay for that service. There are three primary forms that manual processing can take. <u>Prior authorization</u> is where a provider indicates a proposed service and obtains approval for its provision to an eligible recipient before it is actually provided. In some instances, a price is attached; in others, a fee schedule or other pricing mechanism applies. <u>Pre-examination</u> is where each claim coming in is reviewed not only for clerical completeness but also for conformity to policies and regulations. <u>Review as a result of edits</u> is where a case is rejected by the automated claims processing system because of screens which identify a particular claim as requiring manual review for a specific reason. Once such claims are adjudicated they are returned to the automated system for completion of processing and payment. Post-payment reviews, which include utilization reviews and quality control sampling to check error rates, are not included.

There are a number of reasons for manual processing or review. Some reviews are alternatives to automated processing, while others are an absolute requirement without which the automated processing cannot be completed. The reasons for manually processing are:

1. Determination of medical necessity: Medicaid pays only for medically necessary services as a matter of policy. Often the medical necessity determination has to be made on the basis of human judgment in a particular case.

2. Determination of appropriateness of service: occurs where questions of quality of care enter in. Some programs have listed obsolete or useless procedures for which they will not pay, so that automated edits can call out the inappropriate claims. However, many items are not that clear-cut.

3. Prior authorization: review prior to the incurring of an expense for service has a deterrent effect in that providers are less willing to recommend certain services if they are of the opinion that a review will result in the payment being disallowed. There is a further cost containment effect in that the review may result in approval of a less expensive mode of treatment or of an amended treatment plan.

4. Pricing: while Medicaid programs price procedures according to a policy that relates to Medicare and to relative values, all of them have gaps in their fee schedules, largely because of new procedures, "state-of-the-art" procedures, etc. In addition, some States have gaps in their schedules for some procedures priced by schedule elsewhere. In any event, pricing for certain procedures is an important function of manual review.

5. Flexibility: because of special circumstances, or unusual conditions, there may be situations in which providers ask for individual consideration with respect to pricing or approving a given service. Manual review enables this flexibility to be exercised. Ordinarily, a full report documenting the reasons for which special consideration is sought accompanies the claim.

6. Certain legal requirements: in cases where Federal financial participation is sought in the reimbursement for sterilizations and abortions, there must be documentation which conforms to the requirements in the Federal regulations.

7. Monitoring against over-utilization and abuse: software edits in the automated system can identify the claims of a given provider or recipient for a specified time period to enable the program to monitor that activity for evidence of excessive or improper use of services. This is a very useful function which requires the joint action of the automated and manual aspects of claims processing. The edit identifies the potential abuser; the review draws from the history file, reviews the present claim and makes a judgment. Such monitoring can occur not only during the claims processing but also on a post-payment review.

Not all manual reviews are cost-effective and efficient. Where too large a group of claims is identified for review (e.g., all drug claims over $22 per month in Florida, resulting in over 10,000 claims per month reviewed so that few, if any, are the focus of judgment decisions), the process is neither effective nor efficient. Also, where a simple inexpensive edit could do the job, the same situation obtains. However, there are criteria for assessing a situation where manual review can be both cost effective and efficient. These include low volume of claims in a particular category. In such cases, there is no point in developing and running expensive edits, e.g., home health claims in Montana where less than ten are received in a given month. Another indicator for manual review is where the claim cannot be processed without manual action, as in the case where pricing must be done manually. A third criterion for choosing manual reviews occurs when the service proposed is expensive and there are alternative ways of providing necessary care, e.g., extensive dentistry, air ambulance. Fourth are situations where there are relatively few claims and complex judgment is required. The fifth criterion is when control is a critical factor. In particular, manual review is necessary where there are indications from post-payment review processes (Surveillance and Utilization Reviews, Medicaid Quality Control) that certain recipients warrant temporary monitoring by review of each of their individual claims to check on possible abuse or over-utilization, to review each new claim attributed to that recipient or provider as it passes through the claims payment process. In addition, such manual review can assist in establishing charges of fraud against a provider.

The application of the interview methodology in the site-visited States enabled the identification of categories of services that meet criteria of small volume, greater than average likelihood of abuse, need for pricing, and questions of medical necessity. Each of the following categories of service was manually reviewed in at least one of the States visited based on at least one of the criteria:

- Out-of-State Claims
- Medicare Crossover Claims

- Individual Consideration Claims
- Claims Requiring Pricing
- Non-participating Providers
- Non-physician Professional Providers
- Home Health Services/Personal Care
- Outpatient Psychiatric Services
- Independent Laboratories
- Physical, Occupational, and Speech Therapists
- Transportation
- Multiple Surgery
- Elective or Optional Surgery
- Durable Medical Equipment
- Medical Supplies
- Partial Hospitalization
- Prosthetics and Shoes
- Hearing Aids
- Dentures and Extensive Dental Treatment
- Eyeglasses, Lenses, and Vision Care
- Rehabilitation
- Outpatient Renal Dialysis
- Physician Visits to Nursing Home
- Nursing Home without Prior Hospitalization

The listing of these claims categories is intended only as a guide to where manual review might be considered. The fact that a particular claims category fits the criteria and is appropriate for manual review in one State does not preclude it from being appropriate for automated review in another.

IX
Conclusions

An underlying premise of this study was that certain claims categories can be more effectively processed manually than as part of an automated claims processing system. This would imply that it would be possible for the Federal Government to identify these claims categories and provide guidelines for those claims for which manual processing would be cost-effective. Further, in selecting sites where MMISs had been certified, it was assumed that there would be some uniformity in automated claims processing systems among the States. The site visit data indicate that both the premise and the assumption are false. The narrative clearly shows that each MMIS has its own individual characteristics and decisions such as whether to select manual review for a particular claims category are dependent on some combination of system design and personnel capability.

The design of each MMIS system, except perhaps Michigan, was based on factors other than the determination of what was needed and what was the best system to meet those needs. The selection of vendors appears to be the determinant of system design and the relationship with the vendor prescribes the amount and type of manual review. In most cases vendors seemed to adapt another data processing structure to Medicaid processing in order to minimize their programming requirements. To obtain certification and concomitant Federal funding for automated claims processing, the delivery capabilities of the vendors were more important than a well-designed system. A review of the data regarding Federal Medicaid assistance showed a negative correlation with the size and sophistication of the MMIS; however, in terms of actual dollars the larger volume States get the most funding. In any event, no evidence was obtained that Federal funding had any influence on the nature and operation of the MMIS even though it helped to pave the way for having an MMIS in the first place.

Objective data from the five sites visited did not indicate any strong relationships between observed factors and manual review. The sample size of five sites could have provided a useful data base if the MMISs had been similarly structured and observed data were consistent. Unfortunately, this was not the case and the conclusions that can be drawn from a five-site-visit data base are limited. This, however, should not be considered a negative aspect of the study. The narratives of the various State visits and the observed data clearly indicate that the only common characteristic of the State systems is that each is so different. As a result, the study design of five site visits was adequate to establish that great variety in the MMISs exists and additional site visits would have added only marginally to the information obtained.

When the claims processing data are examined in order to establish when there are characteristics of particular MMISs that determine the appropriateness of manual review, little insight is obtained. The number of claims that are manually reviewed or subject to prior authorization do not relate to total volume, processing time, eligible population, number of recipients, administrative costs as a percent of total cost, cost per claim or cost of manual review. In some cases, the five sites are adequate to conclude no relationship, such as with processing time; however, for some of the other factors information is too sketchy.

Except for Michigan, no plan keeps management data to monitor the cost effectiveness of manual versus automated claims processing. The gathering of hard data through interview (as was the case for much of this study) detracts from the reliability of the information. The narratives indicate that there is minimal monitoring of system operation by the Federal Government and that information to develop Federal guidelines for designing a cost effective MMIS system would require a massive study of existing and potential systems.

Nevertheless, certain findings from this study may be useful in determining future Federal policy for MMISs. There are basic principles which can be useful in system design. One of the few conclusions that can be drawn from the objective data is that small programs are much more costly on a per case basis. This is not surprising since with any data processing system there is a significant fixed cost. Volumes in the smaller State programs are not sufficient to allow the low marginal cost of claims to lower the overall cost per claim. The conclusion that may be drawn from this data and the site visit narratives is that smaller State programs may not be able to take advantage of all of the economies of scale of automated claims processing and that systems should be designed to base the use of manual review on volume, coverage and cost considerations. For each Medicaid system this would require a sophisticated analysis of requirements and decisions for each claims category as to whether manual or automated claims processing should be utilized--which a State may wish to require of prospective offerers in Fiscal Agent procurements.

Although it is not possible to specify how a claims processing system should be designed without knowing all of the factors that impact on the particular State program, there are certain categories of services that have a high probability of being cost effectively handled through manual review. These are listed in the summary section. In order to evaluate these claims categories, it would be necessary to have a procedure for obtaining relative costs, and cost accounting systems that would contain the raw cost data.

It should be noted that an optimum claims processing system requires a well thought out plan for choosing between manual and automated processing. This requires programming which takes maximum advantage of that which computers can do well and that which people can do well. The trade-offs should be clear since the costs of automated review must be justified by volume. When judgment is required on low volume categories, a substantial number of varied claims can be dealt with by experienced personnel. Alternatively, it is a waste if decisions called for are those that a system of edits could do inexpensively and effectively.

We would point out that creating an appropriate balance in the mix between manual and automated claims processing is only one of a number of considerations in designing a claims processing system to serve Medicaid, but it is a consideration that tends to be neglected. Appropriate analyses of the tradeoffs can result in the design of such a system.

APPENDIX A

Checklist for Review of "Exception" Manual Processing*

1. <u>Types of Manual Processing</u>

   - List each point in the claims process at which a manual review occurs.

   - For each such point, identify:

     a. the purpose of the review, e.g., pre-authorization, clerical review, screen for a factor;
     b. type of service involved;
     c. volume of claims by type of service;
     d. level of the review person or tiers of persons;
     e. the amount of time per claim involved at each review level; and
     f. how the claim returns to the system.

2. <u>Applicability</u>

   - Determination of who decides whether a claim is subject to manual "exception" review.

   - Can a provider ask for independent consideration--grounds?

3. <u>Decision</u>

   - For each "exception" review, what criteria are used to identify the claim?

     a. type of service--specify;
     b. unclear claim form;
     c. unknown or problem, e.g., out-of-State;
     d. eligibility question;
     e. excessive service or cost;
     f. inappropriate service;
     g. legal requirement;
     h. other, specify.

   - If there are tiers of review, what criteria for referral?

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*This manual processing is identified as "exception" processing to distinguish it from the clerical review which all claims, in some systems, undergo to assure that they can be processed and from reviews that are mandated as a pre-condition for acceptance of claim, e.g., inpatient certification by PSRO.

4. System Results

- Total volume of claims carried by the system for the time period.

- Volume of manually reviewed "exception" claims.

  a. claims denied or reduced;
  b. claims approved.

- Cost saving resulting from manual review.

- "Extra" cost for manual review.

- Average time for claims processing.

- Average time for manually reviewed claims processing.

APPENDIX B

Criteria for Site Selection

1. The presence of a fully-automated system that meets the requirements for MMIS certification affords the best environment for testing the extent to which manual review of claims is efficient and cost-effective. While most systems began with manual review for most claims, as they progressed they moved to greater degrees of automation, with the support of the Federal Government through 90 percent FFP. The question herein addressed is not whether historically manual processing had its place--it did--but rather what its place is in a sophisticated, automated system. Also, with a certified MMIS there is assurance that the basic components of S/UR and MARS are in place to assist in making judgments about the quality and cost of claims processing.

2. Size is of major importance, since the volume of claims in each category that is processed by the system is a determinant of the degree to which manual processing is cost-effective. In large volume programs, expensive automatic screens can identify and deal with many of the types of claims for which such screens would not be cost-effective for lesser volume. However, in order to be able to generalize, it is proposed to include one large program for site selection. The remaining sites will be selected from among medium and small programs in order to focus on relatively small volume services where manual processing might be more cost effective.

3. The number of optional services is offered as a criterion, in that such services are often limited (either to prior-authorization or in frequency) to avoid over-utilization and contain costs. The assumption is that those programs with a large number of optional services will tend to have more manual review of claims in order to assure medical necessity.

4. States that do their own claims processing as well as those that contract with a private Fiscal Agent will be included. Some of the private companies use their own systems, including screens, and charge on a per-claim-processed basis. A mix of processing designs might show variations in type, extent, and cost of manual review that would be valuable to this study.

5. Receptivity is extremely important to the success of the site visits. The attitude of the State Medicaid bureau and the MMIS chief will determine whether needed information can be obtained to complete this study effectively. It is preferable to select a receptive State that was weak on some of the other criteria in preference to one that resisted a study visit.

6. Geographic representation is highly desirable. Of course, with five sites it will not be possible to include every one of the ten HCFA regions, but an attempt will be made to get as wide a representation as possible.

There are a number of other possible criteria such as:

- Error rate: staying away from States with high error rates indicative of possible need for system improvement; however, many of the errors are in the eligibility area and do not relate to claims processing.

- Getting a mix of States that do and do not include the medically needy, since inclusion of this group not only increases the number of recipients but increases the complexity of the CP process in terms of continued eligibility, TPL, spend-down, etc.

- Innovative activity and interest in management improvement as an indicator of data availability, receptivity, existence of unique procedures or operations that might impact on the study.

APPENDIX C

Cost Effectiveness Criteria

A. Legal Requirements

- Supporting documents necessary/review
- Reporting required/file maintained
- Service must be medically necessary
- Cost in staff time; size of staff composition--clerical, professional, pay rates and administrative overhead.

B. Volume/Cost

- Small volume--easier to manual review--limits of staff
- Large volume--can automated edits reduce load (cost-tradeoff) to size that can be handled manually?

C. Error Rate

- Manual review decreases error rate by providing judgment beyond what computer can do
- Manual review can let other errors slip by if forced to payment
- Manual review can deal with judgment factors outside normal quality control.

D. Processing Time

- Manual review increases process time--to what extent in relation to 90-day limit?
- Manual review can avert denials by obtaining necessary information and thus reduce need to reclaim.

E. System Interfaces

- Medicare -- buy-in, cross-over
- AFDC -- eligibility
- TPL -- liability
- Title V programs -- as providers
- BPST not directly relevant here
- MQC not directly relevant here.

F. Trends in Medical Practice

- Defensive medicine
- New techniques and procedures
- Rural clinics--use of physician assistants, paramedic, midwife.

G. Trends in Claims Growth

- Increase--recipient population--eligible population
- Increase utilization
- New legislation may increase eligible population, e.g., CHAP.

APPENDIX D

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